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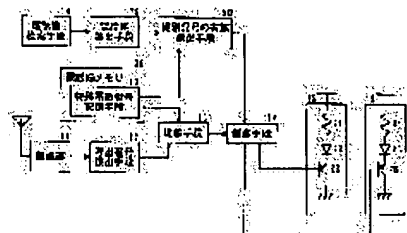
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(54) COMMUNICATION TERMINAL

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a portable telephone set such that display contents are confirmed by the color of a backlight.

SOLUTION: For a portable telephone set provided with a display means of a backlight method, when an incoming call comes from a destination whose telephone number directory data are registered with a mark in a telephone number storage 3, a comparison means 16 detects it, and a control means 17 lights backlights 18, 19 of the display means with a lighting means corresponding to telephone directory data registered with the mark. That is, the fact of the arrival of an incoming call from a destination whose telephone number directory data are registered with a mark is confirmed not only by displayed characters on the display means but also by the color of the backlight.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention enables it to check the contents of a display by the color especially about communication terminals, such as a portable telephone, a pager, etc. possessing back light display means, such as a liquid crystal display.

[0002]

[Description of the Prior Art] In recent years, as for the portable telephone, active ED competition is advanced aiming at the formation of small lightweight, and advanced features. Most of these portable telephones have the back light function so that a LCD (Liquid Crystal Display) module may be provided as a display means and a graphic character and a graphic form can be recognized also in darkness.

[0003] The alphabetic character or graphic form in which the condition of a device is shown, the data of the telephone directory registered into the telephone number by the side of call origination or the memory to build in when call origination occurred from the telephone which has a notice function of a numbering number, etc. are displayed on this display means. Moreover, a mark is attached to this telephone directory, and when a friend's telephone number is registered or the telephone number is distinguished and registered with the mark of a pocket bell, PHS, a house, a firm, etc., a phase hand's telephone number can be searched using a mark.

[0004] The speech processing section 33 which processes voice outputted and inputted through a microphone 34 or a loudspeaker 35 as the portable telephone with such a function is shown in drawing 6, The baseband section 32 which performs digital signal processing, and the wireless section 31 which performs the modulation to a radio frequency signal and recovery of a transceiver signal, The telephone directory memory 36 which memorizes telephone directory data, and CPU39 which performs various kinds of control action, ROM38 the program which specifies the actuation of RAM37 and CPU39 data required for activation of operation are remembered to be is remembered to be, It has the key input section 40 in which key strokes, such as registration of the telephone number and retrieval of a telephone directory, are performed, the liquid crystal display 41 as a display means, and the back light section 42 for showing vividly the alphabetic character and notation which are displayed on a liquid crystal display 41.

[0005] The back light section 42 possesses the resistance which restricts the current of a luminescence means, and the transistor which performs ON/OFF of driver voltage as a device for having luminescence means, such as LED (Light Emitting Diode) and EL (electroluminescence), as the light source, and driving a luminescence means. If a certain key switch of a portable telephone is pushed so that the alphabetic character and graphic form which are displayed on a liquid crystal display 41 also in darkness can be recognized, a transistor will serve as ON and a luminescence means will light up.

→ [0006] Registration of telephone directory data is performed by operating the key of a portable telephone, and the data of a phase hand name or the telephone number inputted from the key input section 40 are stored in the telephone directory memory 36 through CPU39. When the key stroke which directs retrieval of telephone directory data is performed, 1 or two or more phase hand names, and the telephone number which were read from the telephone directory memory 36 are displayed on a liquid crystal display 41, and an indicative data interchanges one after another by the key stroke of scrolling. Moreover, only two or more phase hand names are first displayed at this time, and when actuation of specifying a phase hand is performed, there is also a model constituted so that that telephone number may be displayed.

[0007] Moreover, if a mark is attached and registered into a phase hand name at the time of registration of telephone directory data as shown in drawing 7 (a) and (b), retrieval by the mark will be attained. In this case, if the key stroke which specifies a mark is performed, CPU39 will read the phase hand data to which the mark specified from the telephone directory memory 36 was attached, and will display them on a liquid crystal display 41.

[0008] Moreover, one of the phase hands displayed on the liquid crystal display 41 in this way can be specified, and direct call origination can be carried out there.

[0009]

[Problem(s) to be Solved by the Invention] However, in the conventional portable telephone which aims at small lightweight-ization, the effective area of the display screen of a liquid crystal display 41 is reduced, and it is in the inclination for the size of a graphic character or a graphic form to be restricted. Therefore, even when the telephone number and telephone directory data by the side of call origination are displayed on a liquid crystal display 41, it has the trouble of being hard to view.

[0010] Moreover, although service which transmits an alphabetic character with a portable telephone by ways of speaking, such as MOJITOKU and message mail, is performed recently, these alphabetic character messages are only displayed on a display screen in a uniform color, and the product which can impress a message by change of a color which changes a back light color corresponding to an alphabetic character message, or can enjoy change of a color is not made.

[0011] Moreover, although the liquid crystal display section with a back light is prepared in many, such as a portable telephone and a selective-calling receiving set, the product which satisfied the palatability which can change the color of a back light in the mood of the day, or can change the color of a back light according to surrounding brightness, and has the enjoyableness and practicality that a display is also legible is not made.

[0012] This invention aims at offering communication terminals, such as a portable telephone which can solve such a conventional trouble, and can check the contents of a display by the color, and can enjoy change of a color.

[0013]

[Means for Solving the Problem] Then, the back light constitutes so that light may be emitted by the color matched with the data registered with delimiters, such as a mark, in distinction from the case where the phase hand who distinguished to the telephone directory to build in by attaching delimiters, such as a mark, and registered data into it in the communication terminal of this invention on the occasion of a display and telephone directory retrieval of the arrival-of-the-mail telephone number is displayed on a display means.

[0014] Moreover, in case an alphabetic character message is displayed, when the input signal of the delimiter for back light color specification is contained in the alphabetic character message signal which received, he is trying to change a back light color to the color specified with the delimiter.

[0015] Moreover, the back light means of two or more colors and a means to set up beforehand the back light color made to emit light, to register it, and to change it are established, and the change of the arbitration of a back light color is enabled.

[0016] Therefore, a user can check the information displayed on the display means also by the color of a back light.

[0017] Moreover, a user can change a back light color to arbitration according to the temper of the day, and surrounding brightness.

[0018]

[Embodiment of the Invention] In communication terminals, such as a portable telephone with which invention of this invention according to claim 1 possesses the display means of a back light method When there is arrival of the mail from the phase hand who distinguished by attaching delimiters, such as a mark, to the telephone directory to build in, and registered data, A phase hand's identifier or the telephone number is displayed on a display means. A back light It constitutes so that light may be emitted by the color matched with the data distinguished and registered with delimiters, such as a mark. It can check that there has been arrival of the mail from the phase hand who attached the mark and registered telephone directory data not only by the graphic character of a display means but by the color of a back light.

[0019] In communication terminals, such as a portable telephone with which invention according to claim 2 possesses the display means of a back light method When searching the data registered into the telephone directory to build in, displaying on a display means and the phase hand who registered data in distinction from the telephone directory is displayed on a display means, The phase hand who constituted so that a back light might emit light by the color matched with the data distinguished and registered, attached the mark, and registered telephone directory data can check what is displayed on the display means by the color of a back light.

[0020] The phase hand who registered data in distinction from the telephone directory so that light might be made to emit by the specific color is changed according to a time zone, invention according to claim 3 checks the telephone from a work-related phase hand by the color of a back light to office hours, and the proper use of checking the telephone from a private friend by the color of a back light of it is attained out of office hours at it.

[0021] In communication terminals, such as a portable telephone possessing the display means of a back light method, when there is arrival of the mail, invention according to claim 4 can be constituted so that a back light may emit light by the color matched with the receive mode, and can check reception of broadcast, the reception from a PHS circuit, etc. by the color of a back light.

[0022] Invention according to claim 5 is distinguished by whether the delimiter is given to a name, the telephone number, or both by attaching and registering into the name, the telephone number, or both of a telephone directory the delimiter for back light color specification which carried out setting registration of the back light color beforehand as an approach of registering data in distinction from a telephone directory, and the color of a back light is changed by the existence of a delimiter.

[0023] Invention according to claim 6 is distinguished by the classification of the delimiter given to a name, the telephone number, or both by attaching and registering into the name, the telephone number, or both of a telephone directory the delimiter for back light color specification which carried out setting registration of the back light color beforehand as an approach of registering data in distinction from a telephone directory, and the color of a back light is changed by the classification of a delimiter.

[0024] Invention according to claim 7 as an approach of registering data in distinction from a telephone directory By attaching and registering into the name, the telephone number, or both of a telephone directory the delimiter for back light color specification which carried out setting registration of the back light color beforehand By whether said delimiter is given to a name, the telephone number, or both Or make it distinguish by the classification of a delimiter, and change into other colors, it enables it to be able to delete registration of the color once registered about said delimiter, or to register, and the relation between the data which attached and registered the delimiter, and the color of a back light can be changed

collectively.

[0025] A means by which invention according to claim 8 memorizes the delimiter for back light color specification, A means to detect whether the input signal of the delimiter for back light color specification is contained in the alphabetic character message signal which received is established. When the input signal of the delimiter for back light color specification is contained in the alphabetic character message signal which received When change a back light color to the color specified as the delimiter, it is made to emit light and the delimiter is included in the alphabetic character message which received, the color of the back light of a display screen changes.

[0026] In communication terminals, such as a portable telephone possessing the display means of a back light method, invention according to claim 9 establishes the back light means of two or more colors, and a means to set up beforehand the back light color made to emit light, to register it, and to change it, and it is made to make a back light emit light by the color of arbitration, and it can change the color of a back light according to surrounding brightness, corresponding to the temper of the day.

[0027] Invention according to claim 10 can prepare two or more telephone directories in telephone directory memory, can establish a means to specify it as the object which changes the color of a back light about the telephone data of the telephone directory of either of two or more telephone directories, and can change the telephone data of the object which changes the color of a back light.

[0028] Invention according to claim 11 can prepare two or more telephone directories in telephone directory memory, and can change the telephone data of the object which changes the color of a back light about the telephone data of the telephone directory of either of two or more telephone directories, using a clock means as a means to specify it as the object which changes the color of a back light, by time amount.

[0029] Hereafter, the gestalt of operation of this invention is explained using a drawing.

[0030] (1st operation gestalt) The portable telephone of the 1st operation gestalt The wireless section 11 which restores to an input signal as functional block as shown in drawing 1, A call-number detection means 12 to detect a partner's telephone number when there is arrival of the mail from the telephone which has a notice function of a numbering number, A special telephone number storage means 13 to memorize in the form containing both the telephone directory data registered by attaching a mark, and telephone directory both [one side or] to which the mark is not attached, A telephone directory retrieval means 14 to search a telephone directory, and the telephone directory read-out means 15 which reads the searched telephone directory data from telephone directory memory, The comparison means 16 in comparison with the data memorized by the special telephone number storage means 13 in the data detected with the call-number detection means 12, The data read with the telephone directory read-out means 15 are compared with the data memorized by the special telephone number storage means 13. An existence detection means 50 of a delimiter to identify whether it is that into which it is registered by attaching the mark which should emit light by the specific color, When the 1st luminescence means 18 and the 2nd luminescence means 19 of constituting the back light section 42, and the comparison means 16 detect coincidence, Or when the delimiter with which the existence detection means 50 of a delimiter should emit light by the specific color is detected, the 1st luminescence means 18 is driven and the comparison means 16 detects an inequality, Or when the existence detection means 50 of a delimiter detects those without a delimiter, it has the control means 17 which drives the 2nd luminescence means 19.

[0031] The 1st luminescence means 18 and the 2nd luminescence means 19 possess the light emitting diodes 22 and 25 which emit light in the exposure light of different wavelength, respectively, the resistance 21 and 24 which restricts the current of light emitting diodes 22 and 25, and the transistors 23 and 26 which turn on / turn off the driver voltage to light emitting diodes 22 and 25.

[0032] Although this portable telephone is equipped with the same configuration as drawing 6 except for the back light section 42 in hard, that actuation merely differs from conventional equipment. The call-number detection means 12 of drawing 1, the telephone directory retrieval means 14, the telephone directory read-out means 15, the comparison means 16, the existence detection means 50 of a delimiter, and the control means 17 express functionally the actuation performed by CPU39.

[0033] Moreover, the special telephone number storage means 13 expresses the memory storage function of the telephone directory memory 36 memorized in the form containing both the telephone directory data registered by attaching a mark, and telephone directory both [one side or] to which the mark is not attached. Registration actuation of the telephone directory data to the telephone directory memory 36 is the same as conventional equipment.

[0034] In this portable telephone, when there is arrival of the mail from the telephone which has a notice function of a numbering number, the call-number detection means 12 detects a phase hand's telephone number. The comparison means 16 identifies whether it is the telephone number registered by the mark which should emit light as compared with the telephone directory data memorized by the special telephone number storage means 13 by whether the same thing as the detected telephone number is in the telephone number of this telephone directory data and the specific color attaching this detected telephone number, and tells that discernment result to a control means 17.

[0035] A control signal is turned the 1st luminescence means 18, and a control means 17 turns ON delivery and a transistor 23, when coincidence with the telephone number into which the mark which should emit light by the specific color with the comparison means 16 is registered by giving is detected. Consequently, the color of the back light of the liquid crystal display 41 which the light emitting diode 22 of the 1st luminescence means 18 lights up, and displays the telephone number of the phase hand who received a message turns into a color of the exposure light of a light emitting diode 22.

[0036] Moreover, a control signal is turned the 2nd luminescence means 19, and a control means 17 turns ON delivery and a transistor 26, when an inequality with the telephone number into which the mark which should emit light by the specific color with the comparison means 16 is registered by giving is detected. Consequently, the light emitting diode 25 of the 2nd luminescence means 19 lights up, and the color of the back light of the liquid crystal display 41 which displays a phase hand's telephone number turns into a color of the exposure light of a light emitting diode 25.

[0037] Therefore, when there is arrival of the mail from the phase hand who attached the mark and registered data, a phase hand's telephone number is displayed on a liquid crystal display 41 under the color (exposure light of light emitting diode 22) of a different back light from usual. Therefore, a user becomes possible [checking the arrival not only by the text displayed on the liquid crystal display 41 but by the color of a back light].

[0038] Moreover, in this portable telephone, when displaying telephone directory data on a liquid crystal display 41, the telephone directory data with which the telephone directory retrieval means 14 was memorized by the telephone directory memory 36 according to the directions of a user which it keyed are searched, and the telephone directory read-out means 15 reads the searched telephone directory data from the telephone directory memory 36, and displays on a liquid crystal display 41.

[0039] At this time, the existence detection means 50 of a delimiter identifies whether the mark which should emit light by the specific color gives, and is registered to the read telephone directory data, and tells that discernment result to them at a control means 17.

[0040] A control signal is turned the 1st luminescence means 18, and a control means 17 turns ON delivery and a transistor 23, when it is detected that the mark which should emit light by the specific color with the existence detection means 50 of a delimiter gives, and is registered. Consequently, the color of the back light of the liquid crystal display 41 which the light emitting diode 22 of the 1st luminescence means 18 lights up, and displays the read telephone directory data turns into a color of the exposure light of a light emitting diode 22.

[0041] Moreover, a control signal is turned the 2nd luminescence means 19, and a control means 17 turns ON delivery and a transistor 26, when it is detected that the mark which should emit light by the specific color with the existence detection means 50 of a delimiter is not attached. Consequently, the color of the back light of the liquid crystal display 41 which the light emitting diode 25 of the 2nd luminescence means 19 lights up, and displays the read telephone directory data turns into a color of the exposure light of a light emitting diode 25.

[0042] Therefore, when the telephone directory data which attached and registered the mark which should emit light by the specific color are displayed on a liquid crystal display 41, the color of a back light turns into a different color from usual. Therefore, a user can check that the telephone directory data which attached and registered the mark which should emit light by the specific color are displayed also by the color of the back light of a liquid crystal display 41.

[0043] In addition, the control means 17 is driving one side of a luminescence means based on a prior setup, when coincidence with the telephone number into which the mark to which the comparison means 16 should emit light by the specific color is registered by giving is detected, or when the mark to which light should be emitted by the color of specification [the existence detection means 50 of a delimiter / the telephone number] being attached, and being registered is detected. When there is arrival of the mail from the phase hand who attached and registered a mark by adding or deleting the mark to which the color in which specification should emit light is set as changing this setup, i.e., changing a setup of the color which should emit light about each mark, or each telephone number, the color of the back light when displaying the telephone directory data which attached and registered the mark can change.

[0044] Moreover, adjustable [of the color of a back light] is possible also by it not only changing a luminescence means to drive to the 1st luminescence means 18 or the 2nd luminescence means 19, but changing it from lighting of an independent luminescence means to coincidence lighting of the 1st luminescence means 18 and the 2nd luminescence means 19.

[0045] (2nd operation gestalt) The portable telephone of the 2nd operation gestalt can change the telephone number which changes and displays the color of a back light by the time zone.

[0046] This portable telephone possesses a clock means 51 to by which the special telephone number storage means 13 has the 1st special telephone number storage means 54 and the 2nd special telephone number storage means 55 of memorizing the separate telephone directory data which attached the mark, and notifies time of day to the comparison means 16, and an assignment time-setting storage means 52 memorize the set-up assignment time amount, as shown in drawing 2. Moreover, this drawing is omitted although the existence detection means 50 of a delimiter has connected with the assignment time setting storage means 52 like the comparison means 16 at the 1st special telephone number storage means 54 and the 2nd special telephone number storage means 55, the clock means 51, and the list. Other configurations do not have the 1st operation gestalt (drawing 1) and a change.

[0047] In this portable telephone, the telephone directory data of the customer on work are memorized by the 1st special telephone number storage means 54 and a private friend's telephone directory data are memorized by the 2nd special telephone number storage means 55, for example. Moreover, an office hours band is memorized by the assignment time setting storage means 52 as assignment time amount.

[0048] The comparison means 16 (it is the existence detection means 50 of a delimiter at the time of telephone directory retrieval) When the call-number detection means 12 detects a phase hand's telephone number or the telephone directory read-out means 15 reads telephone directory data from the telephone directory memory 36 When the assignment time amount memorized by the current time and the assignment time setting storage means 52 which the clock means 51 clocks is compared and current time is contained in the time zone of assignment time amount When coincidence is detected by making

applicable to a comparison the telephone directory data memorized by the 1st special telephone number storage means 54 and current time is not contained in the time zone of assignment time amount, coincidence is detected by making applicable to a comparison the telephone directory data memorized by the 2nd special telephone number storage means 55.

[0049] Actuation of the control means 17 which received this coincidence detection result does not have the 1st operation gestalt and a change.

[0050] Therefore, in this portable telephone, when the telephone from a customer receives a message or a customer's telephone directory data are displayed, the color of the back light of a liquid crystal display 41 changes to an office hours band. On the other hand, when it came out of office hours, and the telephone from a friend receives a message or a friend's telephone directory data are displayed, the color of the back light of a liquid crystal display 41 changes.

[0051] In addition, although the example which carried out the group division was shown like [here] the 1st special-symbol storage means and the 2nd special-symbol storage means constitute so that assignment time amount may be separately defined for every mark, and a certain time zone is made to emit light by the specific color for the telephone number to which the 1st mark is given, and you may make it make other time zones emit light by the specific color for the telephone number to which the 2nd mark is given.

[0052] Thus, in this portable telephone, the data which can be checked by change of the color of a back light can be changed by the time zone.

[0053] (3rd operation gestalt) With the 3rd operation gestalt, change of the color of a back light is related with the receive mode, and when broadcast is received, the color of the back light of a display means changes at the time of the reception from a PHS circuit etc.

[0054] Drawing 3 shows this operation gestalt and the receive mode which received in the wireless section 71 through the antenna is detected by the receive mode detection means 72.

[0055] On the other hand, the relation of the receive mode which should emit light in a back light color, and the luminescent color at that time is beforehand memorized by the receive mode storage means 73 for back light color modification.

[0056] It compares whether the comparison means 76 has the receive mode detected with the receive mode detection means 72 in the receive mode memorized by the receive mode storage means 73 for back light color modification, and if it is the receive mode which should emit light by the color of specification [it], that will be told to a control means 77 and a control means 77 will change the color of the back light of a display means.

[0057] (4th operation gestalt) The 4th operation gestalt is shown, the alphabetic character message signal which received in the wireless section 71 following an antenna is detected by the alphabetic character message signal detection means 80, and drawing 4 carries out the comparison test of whether the delimiter with which the comparison means 76 is memorized in this alphabetic character message signal by the delimiter storage means 81 for back light color specification is included. When the delimiter for back light color specification is included, that is told to a control means 77 and a control means 77 makes the luminescence means 78 or the luminescence means 79 emit light based on assignment.

[0058] Also not only in the cellular phone which can send the latest MOJITOKU, P mail, etc. by having done in this way, and can send a message in written form but in the selective-calling receiving set which can send only an alphabetic character from the first, the delimiter 1 contained in the alphabetic character or for continuous back light color specification (for example, \$\$\$) is identified, and it becomes possible to change a back light color into other colors from the usual color.

[0059] Moreover, at the time of alphabetic character transmission of a long sentence, while scrolling and reading the long sentence by inserting the delimiter for back light color modification returned to the usual color into an alphabetic character message, what the color of a back light is changed for only in the middle of a part of (it returns to the usual color) becomes possible.

[0060] (5th operation gestalt) A luminescent color storage means 82 by which drawing 5 remembers the luminescent color with which it was registered to be a back light color registration means 83 by which setting registration of the back light color which makes light emit in the configuration of drawing 1 is performed is added.

[0061] A user chooses either [18] the 1st luminescence means 18 or the 2nd luminescence means 19, for example, the 1st luminescence means, as a luminescence means to usually emit light, with this back light color registration means 83. The result of selection is memorized by the luminescent color storage means 82.

[0062] In this case, when a communication terminal has arrival of the mail and a back light emits light, the 1st luminescence means 18 registered into the luminescent color storage means 82 emits light. Then, if modification registration of a luminescence means by which a user usually emits light with the back light color registration means 83 is carried out from the 1st luminescence means 18 at the 2nd luminescence means 19, the 2nd luminescence means 19 will emit light after that.

[0063] By having done in this way, the color of a back light can be changed to arbitration according to surrounding brightness, corresponding to a user's temper.

[0064] In addition, although the gestalt of the above operation has explained focusing on the example of a portable telephone, of course, you may apply to other pocket communication terminals without a telephone function.

[0065] For example, it is effective in it be possible to be able to think to the concept of the receive mode of invention of claim 4 including the classification of communications services, such as news which have start about the selective calling receiving set, stock information, and horse race anticipation information, and to identify the signal which shows the class of service of the received information with a selective calling receiving set to it, for example, to indicate by the back light by different color (for example, orange) from usual to it at the time of stock information, and informational discernment become easy for a user.

[0066] the difference in the color of a back light -- a user -- an instant -- and it can recognize correctly. Therefore, a user can read the alphabetic character and graphic form information for correctness and a short time by relating with the color of a back light the alphabetic character and graphic form information which are displayed on a liquid crystal display. This effectiveness shows up notably especially in a dark location.

[0067]

[Effect of the Invention] The communication terminal of this invention can attach and distinguish a mark, or can relate with the color of the back light of a display means the telephone directory data which carried out the group division, and can display them so that clearly from the above explanation. Therefore, not only by the alphabetic character and graphic form which are expressed with a display means but by the color of the back light of a display screen, a user can check information and the recognition of correctness and quick information of him is attained.

[0068] Moreover, the receive mode can be checked by the color of a back light.

[0069] Moreover, when receiving input signals, such as an alphabetic character message, the color of a back light can be changed by including the delimiter for back light color specification into the signal.

[0070] Even if a user is in darkness, he can understand information correctly.

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CLAIMS

[Claim(s)]

[Claim 1] The communication terminal characterized by emitting light by the color matched with the data with which said phase hand's identifier or the telephone number was displayed on the display means, and the back light was distinguished and registered into it when there is arrival of the mail from the phase hand who registered data in distinction from the telephone directory to build in in communication terminals, such as a portable telephone possessing the display means of a back light method.

[Claim 2] The communication terminal characterized by for a back light to emit light by the color matched with the data distinguished and registered when searching the data registered into the telephone directory to build in in communication terminals, such as a portable telephone possessing the display means of a back light method, displaying on a display means and the phase hand who registered data in distinction from said telephone directory is displayed on said display means.

[Claim 3] The communication terminal according to claim 1 or 2 with which the phase hand who registered data in distinction from said telephone directory so that light might be made to emit by the specific color is characterized by being changed according to a time zone.

[Claim 4] The communication terminal with which a back light is characterized by emitting light by the color matched with the receive mode in communication terminals, such as a portable telephone possessing the display means of a back light method, when there is arrival of the mail.

[Claim 5] The communication terminal according to claim 1, 2, or 3 characterized by making it distinguish by whether said delimiter is given to a name, the telephone number, or both by attaching and registering into the name, the telephone number, or both of a telephone directory the delimiter for back light color specification which carried out setting registration of the back light color beforehand as an approach of registering data in distinction from a telephone directory.

[Claim 6] The communication terminal according to claim 1, 2, or 3 characterized by making it distinguish by the classification of the delimiter given to a name, the telephone number, or both by attaching and registering into the name, the telephone number, or both of a telephone directory the delimiter for back light color specification which carried out setting registration of the back light color beforehand as an approach of registering data in distinction from a telephone directory.

[Claim 7] As an approach of registering data in distinction from a telephone directory, by attaching and registering into the name, the telephone number, or both of a telephone directory the delimiter for back light color specification which carried out setting registration of the back light color beforehand By whether said delimiter is given to a name, the telephone number, or both Or the communication terminal according to claim 1 to 6 characterized by making it distinguish by the classification of a delimiter, changing into the color of others [**** / deleting registration of the color once registered about said delimiter], and enabling it to register.

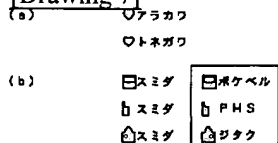
[Claim 8] The communication terminal changes a back light color to the color specified as the delimiter, and it was made to emit light when it had a means a means to memorize the delimiter for back light color specification, and to detect whether the input signal of the delimiter for said back light color specification is contained in the alphabetic character message signal which received and the input signal of the delimiter for said back light color specification was contained in the alphabetic character message signal which received.

[Claim 9] The communication terminal characterized by establishing the back light means of two or more colors, and a means to set up beforehand the back light color made to emit light, to register it, and to change it, in communication terminals, such as a portable telephone possessing the display means of a back light method, and making it make a back light emit light by the color of arbitration.

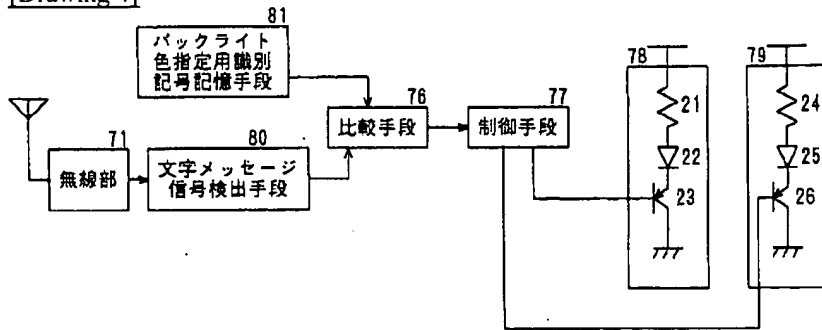
[Claim 10] The communication terminal characterized by having prepared two or more telephone directories in telephone directory memory, and establishing a means to specify it as the object which changes the color of a back light about the telephone data of the telephone directory of either of two or more telephone directories.

[Claim 11] The communication terminal characterized by using a clock means as a means to specify it as the object which prepares two or more telephone directories in telephone directory memory, and changes the color of a back light about the telephone data of the telephone directory of either of two or more telephone directories.

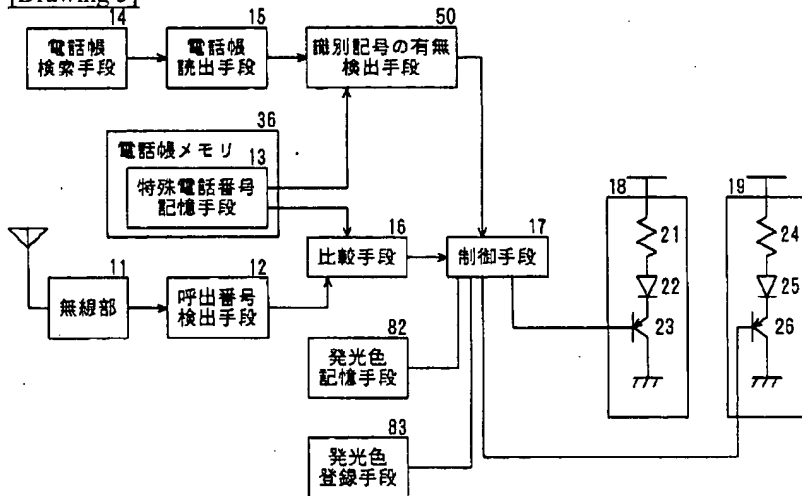
[Translation done.]



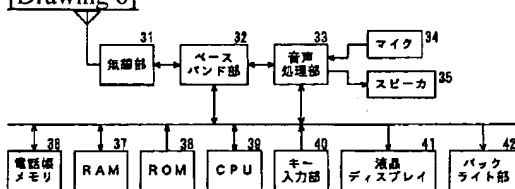
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Translation done.]